



Solitary waves in a weakly stratified two-layer fluid

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The model equation of strongly nonlinear interfacial solitary waves propagating along the pycnocline is considered. The derivation method uses asymptotic analysis of fully nonlinear Euler equations. The perturbation scheme involves a pair of the Boussinesq parameters, first of them characterizes small density slope outside of pycnocline and the second one defines small density jump at the interface. Theoretical model demonstrates good agreement with natural observations of solitary waves registered at the Baikal Lake. This work was supported by the Education Department of Russian Federation (grant No. 2.1.1/4918).